Indiana's Conservation Tillage Trends

1990 - 2007

This GIS project provides a summary of trends associated with the adoption of no-till crop production and soil loss. This data was obtained as a result of spring surveys of Indiana cropland. In an average sized Indiana county, a minimum sample size of 456 crop fields produces a 95 percent level of confidence. During the years 1990 and 2007, the quantity of counties conducting the survey produced valid statewide results.

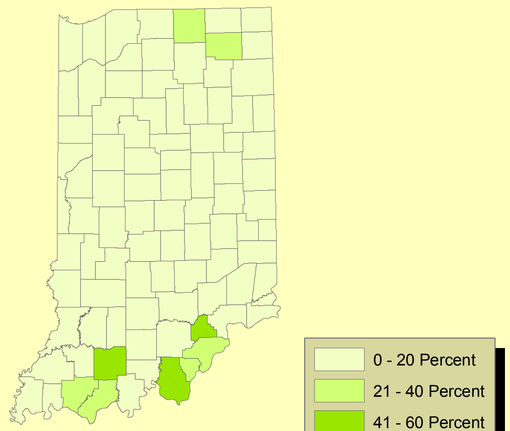
Conservation tillage is defined as any tillage system leaving 30 percent or more crop residue cover on the soil surface after planting. No-till is without question the most effective conservation practice for reducing soil erosion and improving water quality. The crop residue cover and infiltration rates associated with no-till maximize the volume reduction of agricultural runoff and contaminants associated with sediment loss, when compared to other conservation tillage systems.

The 30 percent soil cover that is achieved by conservation tillage is significant to reducing soil erosion by 50 percent or more compared to bare soil. Soil erosion and runoff are considered by volume the greatest contaminants of surface water in most Indiana watersheds. Filter strips, buffers and other conservation practices or structures alone cannot adequately protect soil from soil erosion. Nor can they reduce agriculture runoff and maximize their efficiency for improving water quality without the complement of conservation tillage.

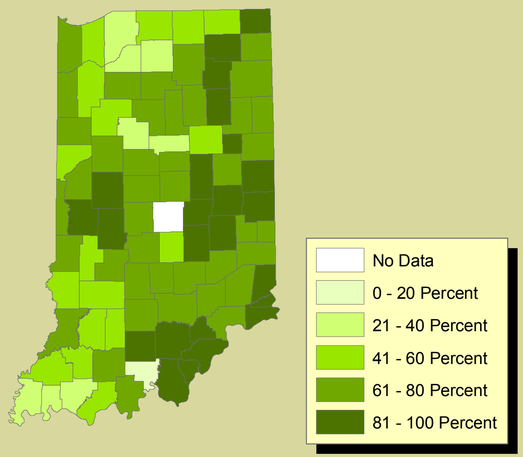
More than one-half of Indiana's landscape is used to grow annual crops. The use of conservation tillage on this cropland is vital to maintaining the long-term productivity of the soil, as well as improving surface water quality. Farmers benefit from conservation tillage through reduced production costs and therefore have the potential for increased profit margins. Both farm and non-farm residents benefit from conservation tillage through cleaner surface water for drinking, recreation and other uses. Wildlife also benefit from the reduced runoff, cleaner water and the habitat provided, particularly in no-till fields.

Since 1990, the overwhelming adoption of conservation tillage has resulted in the accomplishment of 75 percent of the state losing soil at or below "T" (the tolerable level of soil loss). For most Indiana soils, "T" is three to five tons per year and is the rate that new soil can be formed. While soil conservation has come a long way in Indiana, there continues to be more than 3 million acres losing soil at a rate faster than "T" and in need of conservation practices.

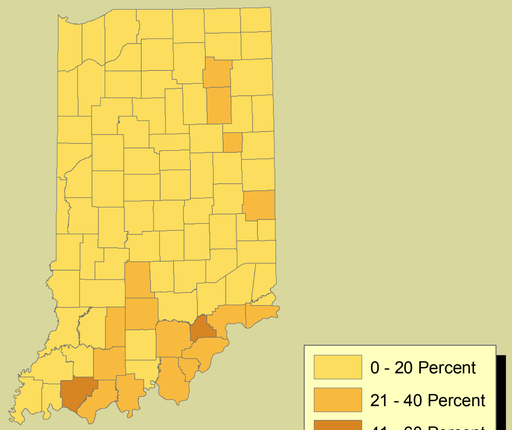
1990 No-till Soybean



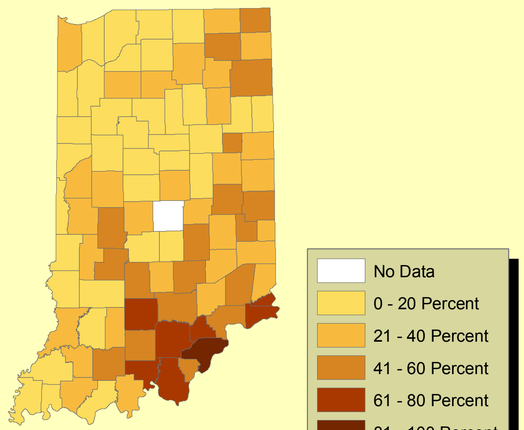
2007 No-till Soybean



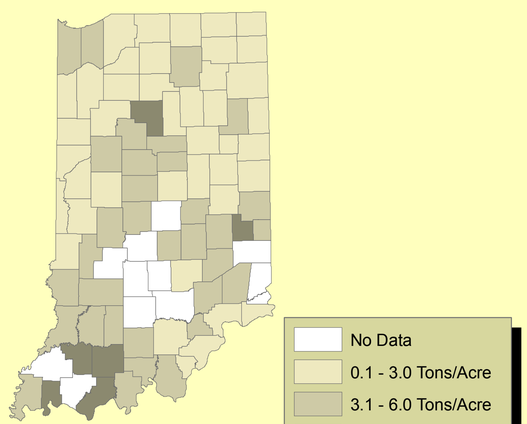
1990 No-till Corn



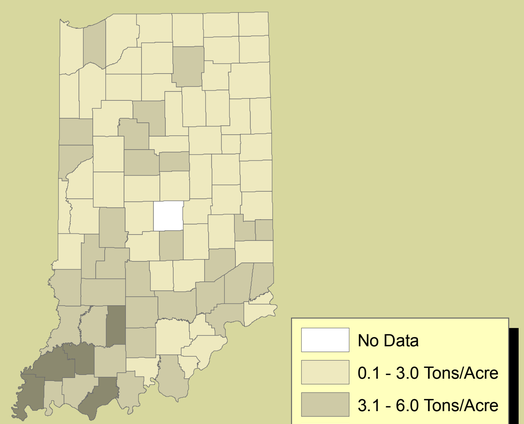
2007 No-till Corn



1996 Soil Loss



2007 Soil Loss



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STATE DEPARTMENT OF
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Indiana State Department of Agriculture
Division of Soil Conservation
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